

# Market Assessment with 50% Renewable Generation

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**Market Issues Working Group**

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# Previous Presentations

Date	Working Group	Discussion points and links to materials
9-12-16	Budget & Priorities Working Group (BPWG)	Presentation of stakeholder feedback, <a href="#">proposed scope of the project</a>
10-19-16	Market Issues Working Group (MIWG)	Presentation providing more <a href="#">detail on the scope and timeline of the project</a>
11-22-16	Market Issues Working Group (MIWG)	Presentation <a href="#">updating project status</a>
1-31-17	Market Issues Working Group (MIWG)	<a href="#">Integrating Public Policy Update (Phases 1 and 2)</a>
2-16-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Study Description and Assumptions Review</a>
3-28-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Study Description and Assumption Update</a>
4-24-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Preliminary DAM Results</a>
6-21-17	Market Issues Working Group (MIWG)	<a href="#">Phase 2: Real-time Study Description and Assumptions</a>
7-13-17	ICAP Working Group (ICAP WG)	<a href="#">The ICAP Market - Preliminary Findings (Phase 2)</a>
8-22-17	ICAP Working Group (ICAP WG)	<a href="#">IPP Phase 2 Capacity Market Results and background information</a>
8-25-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 2: Simulation Progress</a>
9-25-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 2: RT Energy Market Simulation Results</a>
10-3-17	Market Issues Working Group (MIWG)	<a href="#">Presentation discussing market assessment paper</a>
10-16-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 3: Initial Concepts under Consideration</a>
10-27-17	Integrating Public Policy Task Force (IPPTF)	<a href="#">Kick-Off Meeting: Stakeholder Feedback Posted</a>
11-02-17	Market Issues Working Group (MIWG)	<a href="#">IPP Phase 3: Stakeholder Feedback Posted</a>
11-20-17	Integrating Public Policy Task Force (IPPTF)	<a href="#">IPPTF Process and Schedule</a>

# Integrating Public Policy Project

## Harmonizing Public Policy

## Market Assessment for Accommodating Public Policy

### Carbon Pricing:

Study whether incorporating a state policy defined cost of carbon in the wholesale market would improve the overall efficiency of the NYISO energy and capacity markets

### Market Impact Assessment of 50% Renewable Generation:

Study the impacts of decarbonization goals on the current NYISO energy and capacity markets from the high penetration of low carbon or carbon-free resources

### Market Structure Assessment of 50% Renewable Generation:

Study whether other market products or changes to the existing market structure will be necessary to meet the anticipated reliability needs

# Potential Market Products or Changes to the Existing Market Structure

- The NYISO is considering a broad spectrum of market product and structure enhancements that may be necessary to incent market participants to meet the reliability needs anticipated as a result of NYS policy to adopt 50% renewable generation by 2030.
  - The NYISO has reviewed a number of stakeholder suggestions for market product and/or structure enhancements.

# Topic Key

Source	Key
<u>NYISO at October 16, 2017 MIWG</u>	1
<u>NYISO at December 5, 2017 (today's) MIWG</u>	2
<u>Energy Storage Association (ESA)</u>	3
<u>Hydro-Quebec Energy Services (U.S.) (HQUS)</u>	4
<u>Independent Power Producers of New York (IPPNY)</u>	5
<u>Key Capture Energy</u>	6
<u>NRG Energy</u>	7
<u>New York Transmission Owners (NYTOs)</u>	8
<u>Rich Felak, Independent Member of End Use Consumer Sector</u>	9

# Potential Market Products or Changes to the Existing Market Structure

- Potential concepts for new energy market products (based on all feedback received):
  1. Separate products for regulation up and regulation down<sup>1,5</sup>
  2. Ramping product to cover forecast error<sup>1,3,4,5,6,7,8</sup>
  3. Down-ramp product<sup>8</sup>
  4. Cycling product to provide more frequent starts and stops<sup>2</sup>
  5. Load shift product<sup>3</sup>

# Potential Market Products or Changes to the Existing Market Structure

- Potential energy market products or rules that could be modified or enhanced (based on all feedback received):
  - Ancillary Services
    1. More dynamic ancillary service requirements and shortage pricing levels<sup>1,3,6</sup>
    2. Evaluate operational needs for reserve, regulation, voltage support, inertia, and/or primary frequency response<sup>2,3,5,6,7</sup>
    3. Consider expected performance when determining reserve market compensation<sup>3,6,8</sup>

# Potential Market Products or Changes to the Existing Market Structure

- Potential energy market products or rules that could be modified or enhanced (based on all feedback received):
  - Scheduling
    1. More frequent scheduling of transactions<sup>2,4</sup>
    2. Schedule energy, reserves, and regulation on a 15-minute basis in the Day-Ahead<sup>3,6</sup>
    3. Expand the resources eligible to provide black start capability<sup>6</sup>
    4. Consider revisions to energy market LBMP based penalties when LBMPs are negative<sup>2</sup>



# Potential Market Products or Changes to the Existing Market Structure

- Potential energy market products or rules that could be modified or enhanced (based on all feedback received):
  - Price Formation
    1. Revisions to offline fast start pricing<sup>1,5</sup>
    2. Revisions to shortage pricing levels for reserve, regulation, and transmission<sup>2,3,5,7</sup>
    3. LESR payment reforms<sup>6</sup>
    4. Consider mechanisms for improved energy market price formation<sup>2</sup>

# Potential Market Products or Changes to the Existing Market Structure

- Potential energy market products or rules that could be modified or enhanced (based on all feedback received):
  - Ongoing Efforts
    1. Large Scale Solar Integration<sup>2</sup>
    2. Energy Storage Integration and Optimization<sup>2</sup>

# Potential Market Products or Changes to the Existing Market Structure

- **Potential capacity market aspects that could be evaluated:**
  1. Capacity supplier obligations<sup>2</sup>
  2. Output duration requirements<sup>1,5</sup>
  3. Measurement of capacity performance<sup>2</sup>
- **Potential redesign of capacity market:**
  1. Forward Capacity Market (FCM)<sup>7,5</sup>
- **Potential new capacity market product:**
  1. Ramping capacity product<sup>8</sup>

# Potential Market Products or Changes to the Existing Market Structure

- Potential capacity market rules that could be modified or enhanced:
  1. Initial performance factors for new resources<sup>1</sup>
  2. Treatment of behind-the-meter and front-of-the-meter resources<sup>2</sup>
  3. Treatment of renewables in the determination of capacity requirements<sup>2</sup>
  4. Reliability criteria (i.e., LOLE 0.1)<sup>9</sup>
  5. Monetize transmission security<sup>8</sup>

# Market Structure Assessment Process

- Feedback regarding Phase 3 of the Integrating Public Policy project has been posted to the 11/2/2017 MIWG meeting materials.
- Promising market concept ideas will be further developed in 2018 as part of the continuation of the Integrating Public Policy project.

# Next Steps

- **December – Release Market Assessment Whitepaper**
- **December 20, 2017 – Discuss Market Assessment Whitepaper**

# Questions?

We are here to help. Let us know if we can add anything.

# The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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